WE CLAIM:

1. A method for introducing and stabilizing heterologous and recombinant genes in a thermophilic host comprising the steps of:

one of inactivating and deleting a characteristic gene defining a detectable host characteristic from said thermophilic host, resulting in a modified thermophilic host expressing an absence of said detectable host characteristic; and

inserting a DNA fragment of interest into said modified thermophilic host together with an intact said characteristic gene, whereby said detectable host characteristic is restored to said thermophilic host thereby enabling one of detection and confirmation of successful transformation using plasmid vectors and integration of said DNA fragment into a chromosome of said thermophilic host.

2. A method in accordance with Claim 1, wherein said characteristic gene is a malate dehydrogenase gene.

3. A method in accordance with Claim 1, wherein said thermophilic host is a *Thermus* sp.

4. A method in accordance with Claim 1, wherein said characteristic gene is a phytoene dehydrogenase gene.

5. A method in accordance with Claim 1, wherein said thermophilic host is *Thermus thermophilus*.

6. A method in accordance with Claim 5, wherein said *Thermus thermophilus* strain is a *Thermus thermophilus* CARD mutant strain which over-expresses beta-carotene.

7. A method in accordance with Claim 1, wherein said characteristic gene is a β-galactosidase gene.

8. A method in accordance with Claim 7, wherein said characteristic gene is a *Thermus thermophilus* β-galactosidase gene.

9. A method in accordance with Claim 4, wherein said characteristic gene is a *Thermus thermophilus* phytoene dehydrogenase gene.

10. In a *Thermus* strain comprising one of an inactivated and deleted characteristic gene defining a detectable host characteristic, a method for producing biotechnology products comprising the steps of:

transforming said *Thermus* strain with a plasmid or integration vector comprising an intact said characteristic gene, said plasmid or integration vector comprising at least one strong *Thermus* promoter and at least one convenient multiple cloning site, whereby expression of any gene of interest is enabled;

cloning a gene of interest into said at least one multiple cloning site; and

expressing said gene of interest in said *Thermus* strain using said strong *Thermus* promoter.

11. A method in accordance with Claim 10, wherein said characteristic gene is a malate dehydrogenase gene.

12. A method in accordance with Claim 10, wherein said characteristic gene is a *Thermus thermophilus* phytoene dehydrogenase gene.

13. A method in accordance with Claim 10, wherein said characteristic gene is a *Thermus thermophilus* β-galactosidase gene.

14. An integrative vector comprising:

a plasmid comprising one of a functional *mdh* gene, a *phyD* gen and a β-galactosidase gene downstream of a *Thermus* promoter;

at least one *E. coli* replication gene and no genes enabling replication in *Thermus*;

a second *Thermus* promoter;

a multiple cloning site disposed downstream of said second *Thermus* promoter; and

a gene of interest cloned into said multiple cloning site, said gene of interest being expressed by said second *Thermus* promoter located immediately upstream.